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(54) Title: HYDROXYAPATITE GRAFTED FUMARATE BASED MACROMERS FOR BIODEGRADABLE COMPOSITES

(57) Abstract: A composition is disclosed which comprises (i) a macromer prepared by reacting an unsaturated diacid having a carbon-carbon double bond and a saturated diacid, and (ii) a bioactive ceramic grafted to the macromer. In one embodiment, the unsaturated diacid having a carbon-carbon double bond is fumaric acid, the saturated diacid is compatible with fumaric acid and poly(propylene fumarate) such as succinic acid, glutaric acid, adipic acid, pimelic acid, suberic acid, azelaic acid, sebatic acid and mixtures thereof, and the bioactive ceramic is hydroxyapatite. In another embodiment, hydroxyapatite is grafted with a biodegradable and crosslinkable macromer comprising silane units alternating with fumarate and adipate units.